

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification:

Page 6, line 12, the entire Summary of the Invention has been amended as follows:

SUMMARY OF THE INVENTION

In one aspect of the present invention, an inductive coil for an electromotive device includes a pair of concentric conductive sheet metal winding portions each comprising a plurality of axially extending conductive bands each being separated from an adjacent conductive band by a space, each of the conductive bands of one of the winding portions being coupled to one of the conductive bands of the other winding portion, the winding portions being encapsulated in a material that extends through at least one of the spaces from an exterior portion of the induction coil to an interior portion of the induction coil.

[In one aspect of the present invention, an inductive coil for an electromotive device includes a pair of concentric conductive sheet metal windings separated by an encapsulating material, each of the windings consisting of a plurality of axially extending conductive bands each being separated from an adjacent conductive band by a space, each of the conductive bands of one of the windings being coupled to one of the conductive bands of the other winding.

In another aspect of the present invention, a method of fabricating an inductive coil from a pair of conductive plates includes cutting each said plate in a pattern to produce a series of conductive bands and cutouts, rolling said cut plates into telescoping inner and outer tubes, wrapping said inner tube, inserting said wrapped inner tube into said outer tube, wrapping said outer tube, and coupling said conductive bands of said inner tube to said conductive bands of said outer tube to form the helical induction coil.

In yet another aspect of the present invention, a method of fabricating an inductive coil includes forming a pair of conductive metal sheets in a pattern to produce a plurality of conductive bands each being separated from an adjacent conductive band by a space, shaping the formed conductive sheets into inner and outer windings, coating the inner winding, positioning the coated inner winding into the outer winding, coating the outer winding, and coupling each of the conductive bands of the inner winding to one of the conductive bands of the outer winding.

In yet still another aspect of the present invention, an inductive coil for an electromotive device includes a pair of concentric conductive sheet metal windings each consisting of alternating axially extending conductive bands and spaces, each of the conductive bands having a tensile strength greater than 40,000 psi, each of the conductive bands of one of the windings being coupled to one of the conductive bands of the other winding.

In yet a further aspect of the present invention, an inductive coil for an electromotive device includes a pair of concentric conductive sheet metal windings each consisting of alternating axially extending conductive bands and spaces, each of the conductive bands having a yield strength greater than 30,000 psi, each of the conductive bands of one of the windings being coupled to one of the conductive bands of the other winding.

In yet still a further aspect of the present invention, an inductive coil for an electromotive device includes a pair of concentric conductive sheet metal windings each consisting of alternating axially extending conductive bands and spaces, each of the conductive bands having a percent elongation less than 20%, each of the conductive bands of one of the windings being coupled to one of the conductive bands of the other winding.

In yet still another aspect of the present invention, an inductive coil for an electromotive device includes a pair of concentric

conductive sheet metal windings each consisting of alternating axially extending conductive bands and spaces, each of the conductive bands having a hardness greater than a Brunell number of 70, each of the conductive bands of one of the windings being coupled to one of the conductive bands of the other winding.] It is understood that other embodiments of the present invention will become readily apparent to those skilled in the art from the following detailed description, wherein it is shown and described only embodiments of the invention by way of illustration of the best modes contemplated for carrying out the invention. As will be realized, the invention is capable of other and different embodiments and its several details are capable of modification in various other respects, all without departing from the spirit and scope of the present invention. Accordingly, the drawings and detailed description are to be regarded as illustrative in nature and not as restrictive.

In the Abstract:

The abstract of the disclosure has been amended as follows:

ABSTRACT

An inductive coil for an electromotive device includes a pair of concentric conductive sheet metal winding portions each comprising a plurality of axially extending conductive bands each being separated from an adjacent conductive band by a space, each of the conductive bands of one of the winding portions being coupled to one of the conductive bands of the other winding portion, the winding portions being encapsulated in a material that extends through at least one of the spaces from an exterior portion of the induction coil to an interior portion of the induction coil.

[An armature apparatus for brushless and brush type electric motors and a manufacturing method for same armature. The armature represents an improved design for electric motors having a rigid, thinwall

configuration and high conductor packing density in the magnetic flux air gap that results in motors with higher torque and speed capabilities and the ability to operate at higher temperature than conventional motor designs. The armature is fabricated from pre-machined copper sheet metal parts with an electrical conductor pattern of numerous axially extending conductive bands. These precision machined sheet metal parts are cold rolled to form two work hardened cylinders, each cylinder having a complimentary pattern of electrically conductive bands creating a half electric circuit. The two cold rolled metal cylinders are sized such that the smaller diameter inner cylinder fits inside the larger diameter outer cylinder. The surface of the inner cold rolled cylinder is overwrapped with fiber strands, woven in several layers to provide physical spacing and electrical insulation. The fiber wrapped inner cylinder is placed inside the larger outer cylinder radially oriented to ensure that an electrical circuit is created by welding the inner and outer cylinder at the conductor tabs. The surface of this cylinder assembly is overwrapped with fiber strands, woven in several layers and holding the two cylinders together. The entire armature coil is encapsulated in a potting material to add composite strength and electrical insulation. The result of this assembly is a freestanding, ironless core, inductive armature coil for brushless or brush type electric motors.]